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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,302	12/02/2003	Akihiro Horii	P/16-347 DIV	5903
2352	7590	09/27/2005	EXAMINER	
OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			LEE, HWA S	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/727,302

Applicant(s)

HORII ET AL.

Examiner

Andrew Hwa S. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 7 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received:

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-5 , 7, and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear if the elements of claim 2 are additional elements of claim 1 or if the elements of claim 2 are further defining the elements of claim 1. In addition, it is confusing as it is unclear if the elements of claim 3 are additional elements of claim 2 or if the elements of claim 3 are further defining the elements of claim 2.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an

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international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Mandella et al (US 6,201,608).

Madella et al show ("Mandella" hereinafter) show a method and apparatus for measuring optical reflectivity and imaging through a scattering medium comprising:

a light source (68) for supplying low coherent light so that tomographic images of an object can be constructed based on light reflected or scattered from the object to which the low coherent light is irradiated;

a light irradiating/receiving unit (Fig. 8a-c) for irradiating the low coherent light supplied from said light source to said object, and receiving the light reflected or scattered from said object, said light irradiating/receiving unit including a first optical scanning block capable of scanning said object at least one-dimensionally in a direction of light reception or irradiation;

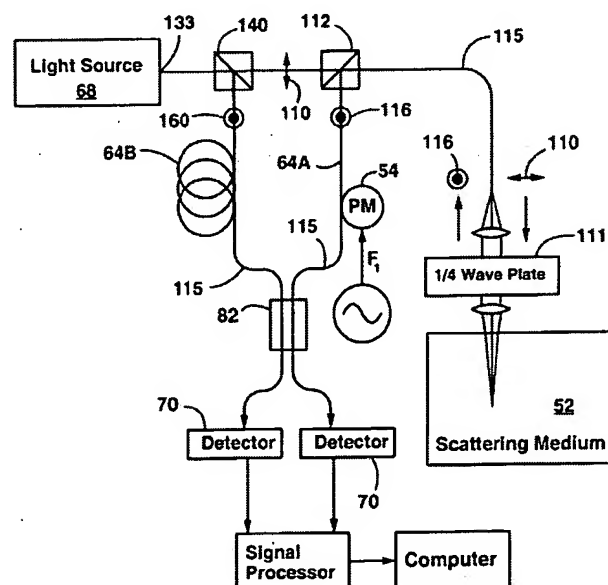


Fig. 15

- a first light path member (lens, GRIN lens) over which the coherent light is propagated to said object and the light reflected or scattered from said object is propagated to said light irradiating/receiving unit;
- a second light path member over which the low coherent light is propagated;
- a first optical branching unit (140), interposed between light source and said first optical scanning block, for branching the low coherent light supplied from said light source into said first optical scanning block and said second light path member;
- a second optical branching unit, included in said first optical scanning block, for branching out light reflected or scattered from said object from said first optical scanning block;
- a third light path member over which the reflected or scattered light branched out by said second optical branching unit is propagated;
- a coupling unit (82) for coupling the low coherent light propagated over said second light path member and the reflected or scattered light propagated over said third light path member so that the low coherent light and reflected or scattered light will interfere with each other;
- a detection unit (70) for detecting the interference caused by said coupling unit to produce an interfering signal;
- an optical length variation unit (64B, 54), coupled to one of said second and third light path members, for varying at least one of a phase delay and a group delay of light by means of an incident light path and an emitted light path (fibers connected to 64B, 54), and a light-transmissive optical element (64B, 54) interposed between

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the incident light path and emitted light path, so that a point of interference can be scanned in the optical-axis direction; and
an image production unit (signal processor, computer) for processing the interfering signal detected by said detection unit to produce a tomographic image of said object.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 3, **as understood by the examiner**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Mandella as applied to claim 1 above, further in view of Tearney et al (US 6,111,645).

Mandella shows all the elements but does not expressly show the claimed ways to phase modulate the reference arm of the interferometer. Mandella teaches that the phase modulation can be a piezoelectric fiber optic stretcher, an electrooptic crystal, or any other phase modulators known in the art.

Tearney et al ("Tearney" hereinafter) shows a grating based phase control optical delay line having the elements as claimed.

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At the time of the invention , one of ordinary skill in the art would have used the phase modulator of Tearney with the apparatus of Mandella in order to improve scanning speed (Abstract).

Allowable Subject Matter

Claims 4, 5, 7 and 8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Hwa S. Lee whose telephone number is 571-272-2419. The examiner can normally be reached on Tue-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on 571-272-2800 ext 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Andrew Hwa Lee', is positioned above the printed name.

Andrew Hwa Lee
Primary Examiner
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